Residential Smart PV Solution Quick Guide
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

Issue: 02
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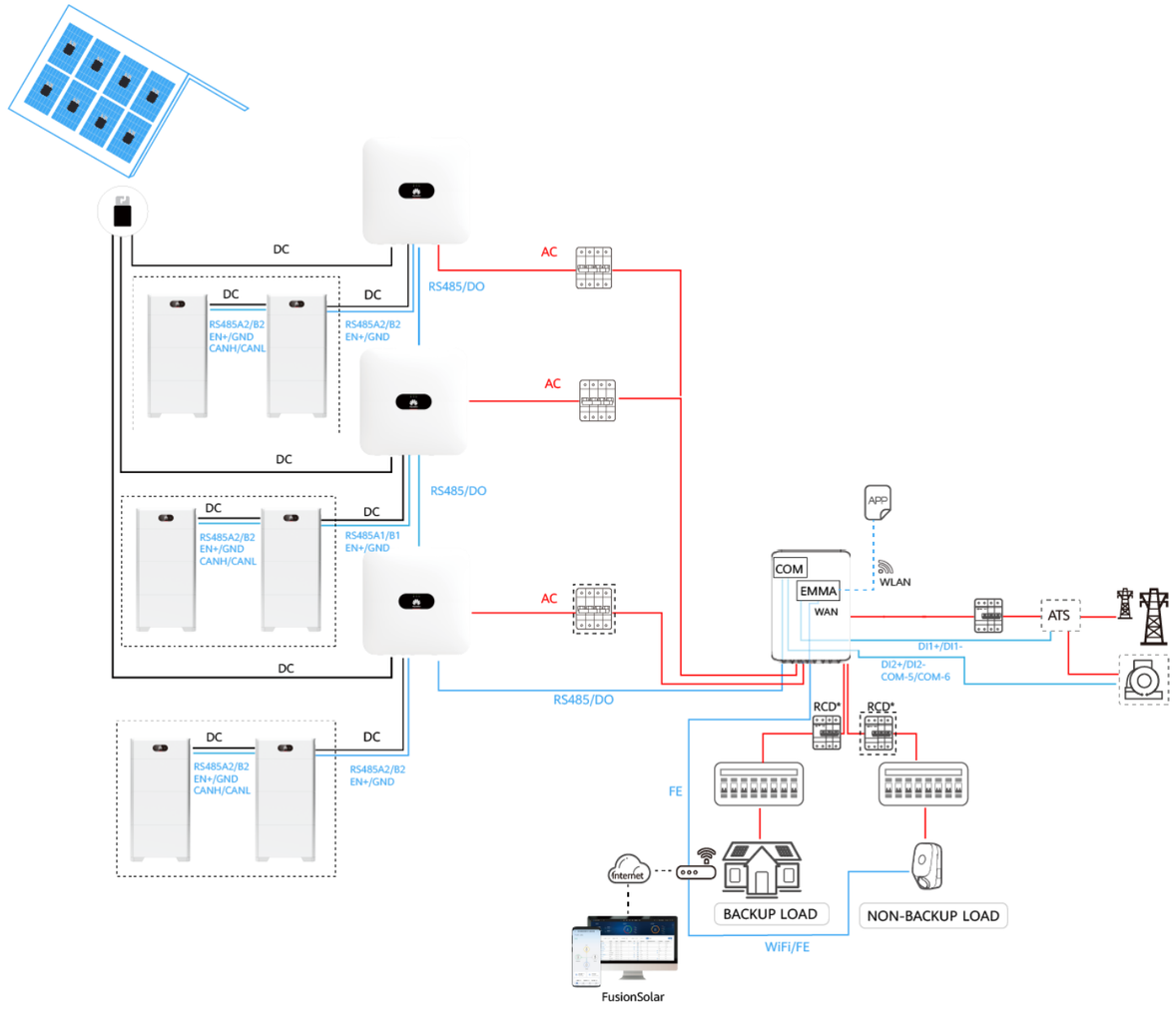
HUAWEI

1 Networking

Connecting All Loads to the SmartGuard



* The figure uses the LUNA2000-(5-30)-S0 as an example.

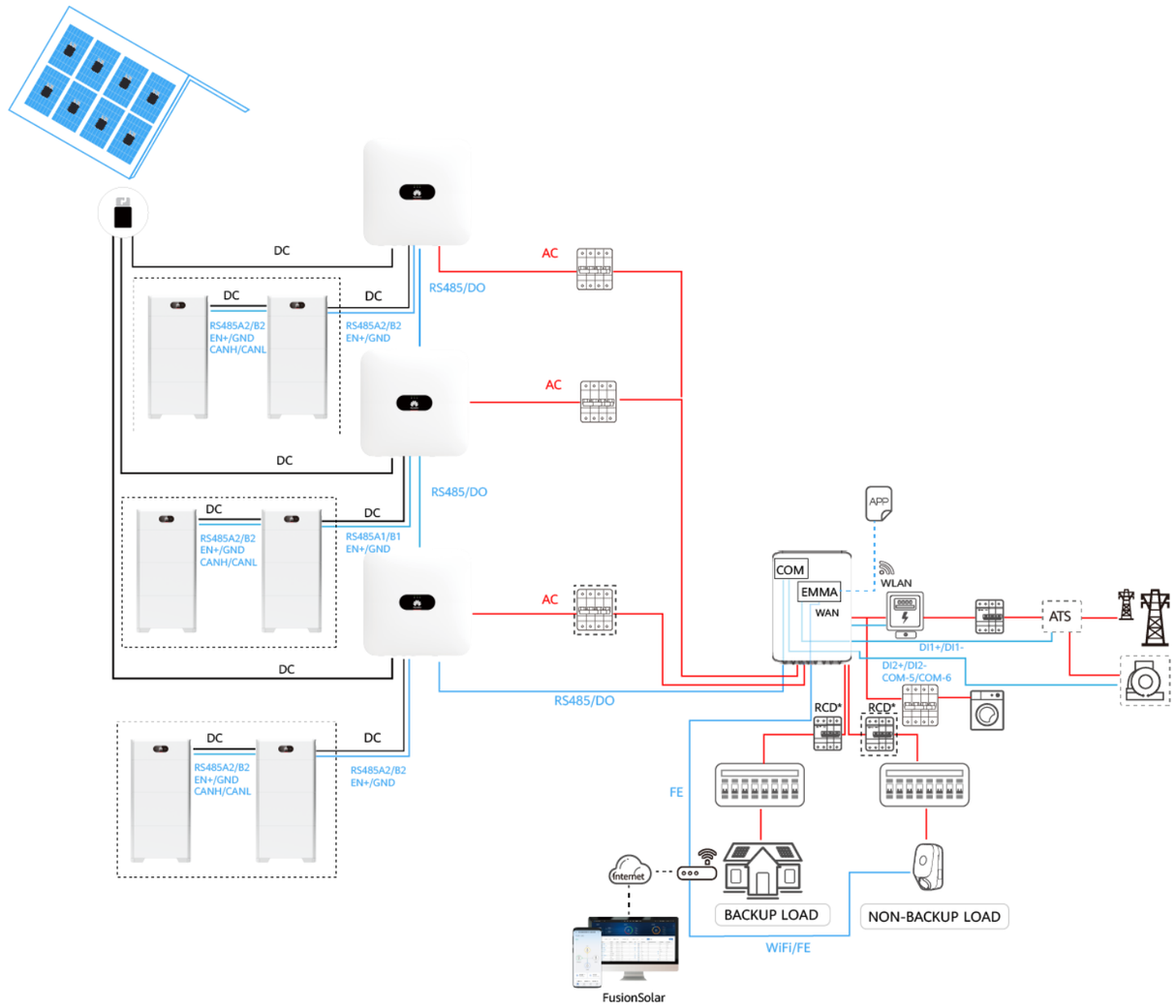
DANGER

- An RCD must be installed for the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the loads may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of M1 or MAP0 inverters x 100 mA or ≥ Number of MB0 inverters x 300 mA.

NOTE

- Both the EMMA in the SmartGuard and the Smart Dongle provide communication capabilities. Only either of them can be installed in a power plant for networking. Otherwise, communication between devices will be abnormal.
- If a charger is configured, the charger must be installed on the non-backup load port.

Connecting Some of Loads to the SmartGuard



NOTE

The three-phase SmartGuard supports a maximum load current of 63 A. If the load current exceeds 63 A, only some of loads can be connected to it. In addition, a power meter needs to be connected between the three-phase SmartGuard and the main circuit breaker.

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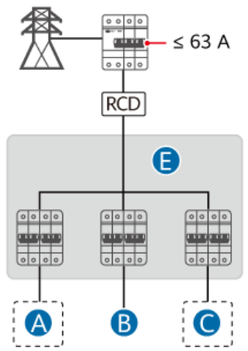
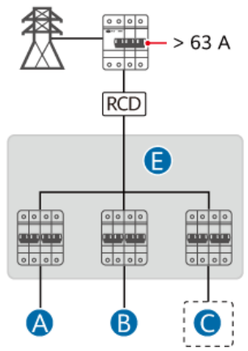
1 Networking

If the main circuit breaker's rating is 63 A or less, you can connect all or some of the loads to the SmartGuard. However, if the rating is greater than 63 A, you can connect only some of the loads to the SmartGuard. (Dashed boxes indicate optional components.)

Main circuit breaker ≤ 63A

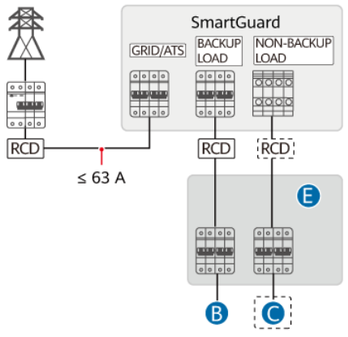


Main circuit breaker > 63A

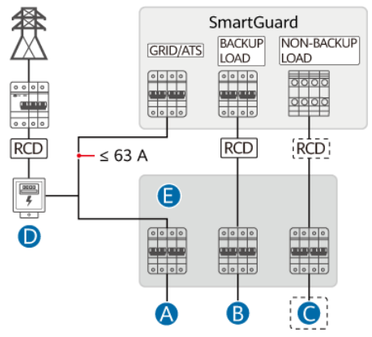


Loads connected to the SmartGuard (dashed boxes indicate optional components)

Connecting all loads to the SmartGuard



Connecting some of loads to the SmartGuard



(A) Load not connected to the SmartGuard

(B) Backup load

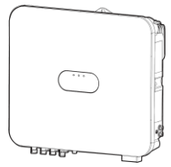
(C) Non-backup load

(D) Power meter

(E) AC power distribution box

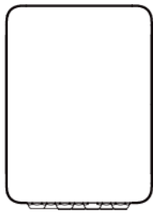
2 Product Overview

Inverter



ESS

SmartGuard



Smart PV Optimizer

Component	Model	Description
Inverter	SUN2000-(3KTL-10KTL)-M1 SUN2000-(12K-25K)-MB0 series SUN5000-(17K, 25K)-MB0 series SUN2000-(5K-12K)-MAP0 series SUN5000-(8K, 12K)-MAP0 series	• M1/MB0: Only one inverter is supported. • MAP0: A maximum of three inverters are supported. • The SUN2000-(5K-12K)-MAP0 inverter cannot be cascaded with other inverters. • SUN5000 inverters cannot be cascaded with SUN2000 inverters. • Optimizers must be configured for all PV modules connected to a SUN5000 inverter. Otherwise, the inverter cannot be started.
Energy storage system (ESS)	LUNA2000-(5-30)-S0 LUNA2000-(7, 14, 21)-S1	• Each M1/MAP0 can connect to a maximum of two ESSs, and each MB0 can connect to a maximum of four ESSs. (each battery terminal can connect to a maximum of two batteries) • The LUNA2000-(5-30)-S0 and LUNA2000-(7, 14, 21)-S1 cannot connect to the same inverter in a parallel system. • If inverters are cascaded, the LUNA2000-(5-30)-S0 and LUNA2000-(7, 14, 21)-S1 cannot connect to different inverters.
SmartGuard	SmartGuard-63A-T0 SmartGuard-63A-AUT0	Works with the inverter, ESS, grid, and home appliances to achieve smart management on home power consumption, grid detection, and on/off-grid switchover.
Smart PV Optimizer	SUN2000-450W-P2 SUN2000-600W-P MERC-600W-PA0 MERC-(1300W, 1100W)-P	For details about the optimizer supported by the inverter, see: • SUN2000 Smart PV Optimizer User Manual • MERC-600W-PA0 Smart PV Optimizer User Manual • MERC-(1300W, 1100W)-P Smart PV Optimizer User Manual

NOTE

1. The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.
2. For details about the solution components, installation, and cable connections, see the corresponding user manuals and quick guides.
3. The cable colors involved in this document are for reference only. Select cables in accordance with local cable specifications.

Residential Smart PV Solution Quick Guide
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

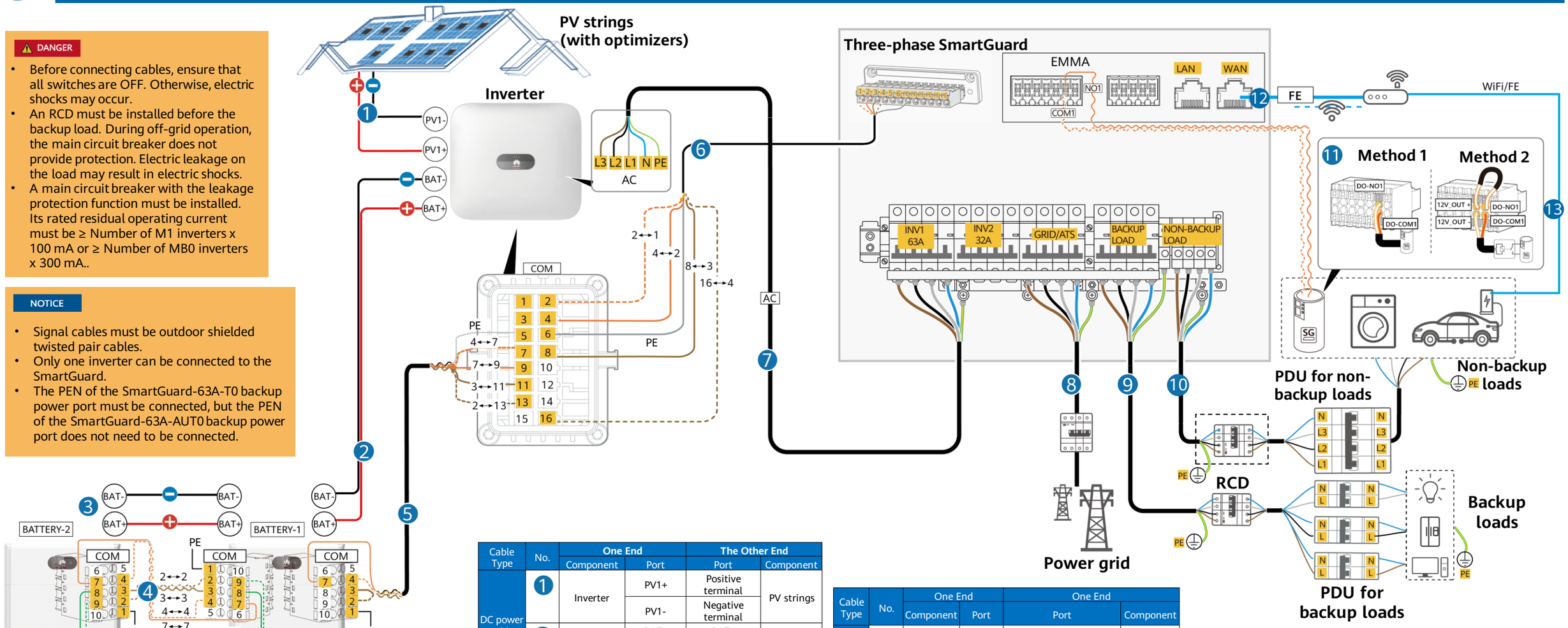
3 Cable Connections (Three-Phase Inverter M1/MB0 + ESS S0 + SmartGuard)

DANGER

- Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.
- An RCD must be installed before the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the load may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of M1 inverters x 100 mA or ≥ Number of MB0 inverters x 300 mA..

NOTICE

- Signal cables must be outdoor shielded twisted pair cables.
- Only one inverter can be connected to the SmartGuard.
- The PEN of the SmartGuard-63A-T0 backup power port must be connected, but the PEN of the SmartGuard-63A-AUT0 backup power port does not need to be connected.



Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
DC power cable	1	Inverter	PV1+	Positive terminal	PV strings
			PV1-	Negative terminal	
	2	Inverter	BAT+	BAT+	ESS 1
			BAT-	BAT-	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT-	BAT-	
Signal cable	4	ESS 1	COM-2 (left)	COM-2 (right)	ESS 2
			COM-3 (left)	COM-3 (right)	
			COM-4 (left)	COM-4 (right)	
			COM-7 (left)	COM-7 (right)	
			COM-8 (left)	COM-8 (right)	
			COM-9 (left)	COM-9 (right)	
	5	Inverter	COM-13	COM-2 (right)	ESS 1
			COM-11	COM-3 (right)	
			COM-7	COM-4 (right)	
			COM-9	COM-7 (right)	
			COM-5 (shield layer)	COM-1 (right) (shield layer)	
	6	Inverter	COM-2	COM-1	SmartGuard
			COM-4	COM-2	
			COM-8	COM-3	
			COM-16	COM-4	

Cable Type	No.	One End		One End	
		Component	Port	Port	Component
AC power cable	7	Inverter	AC-L1	INV1-L1	SmartGuard
			AC-L2	INV1-L2	
			AC-L3	INV1-L3	
			AC-N	INV1-N	
			AC-PE	INV1-PE	
	8	Grid	L1	GRID/ATS-L1	SmartGuard
			L2	GRID/ATS-L2	
			L3	GRID/ATS-L3	
			N	GRID/ATS-N	
			PE	GRID/ATS-PE	
	9	PDU for backup loads	L1	BACKUP LOAD-L1	SmartGuard
			L2	BACKUP LOAD-L2	
			L3	BACKUP LOAD-L3	
			N	BACKUP LOAD-N	
			PE	BACKUP LOAD-PE	
	10	PDU for non-backup loads	L1	NON-BACKUP LOAD-L1	SmartGuard
			L2	NON-BACKUP LOAD-L2	
			L3	NON-BACKUP LOAD-L3	
			N	NON-BACKUP LOAD-N	
			PE	NON-BACKUP LOAD-PE	

Cable Type	No.	Cable Connection Description
Signal Cable	11	Method 1: Use DO dry contacts to directly drive the SG Ready heat pump. The max. capability of the DO dry contacts is 12 V DC@1 A. Method 2: Use a 12 V@30 mA power supply to drive the external relay. Choose the proper contact capability of the external relay according to the SG Ready heat pump port.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	12	EMMA	WAN	LAN	Router
	13	Charger	FE	LAN	Router

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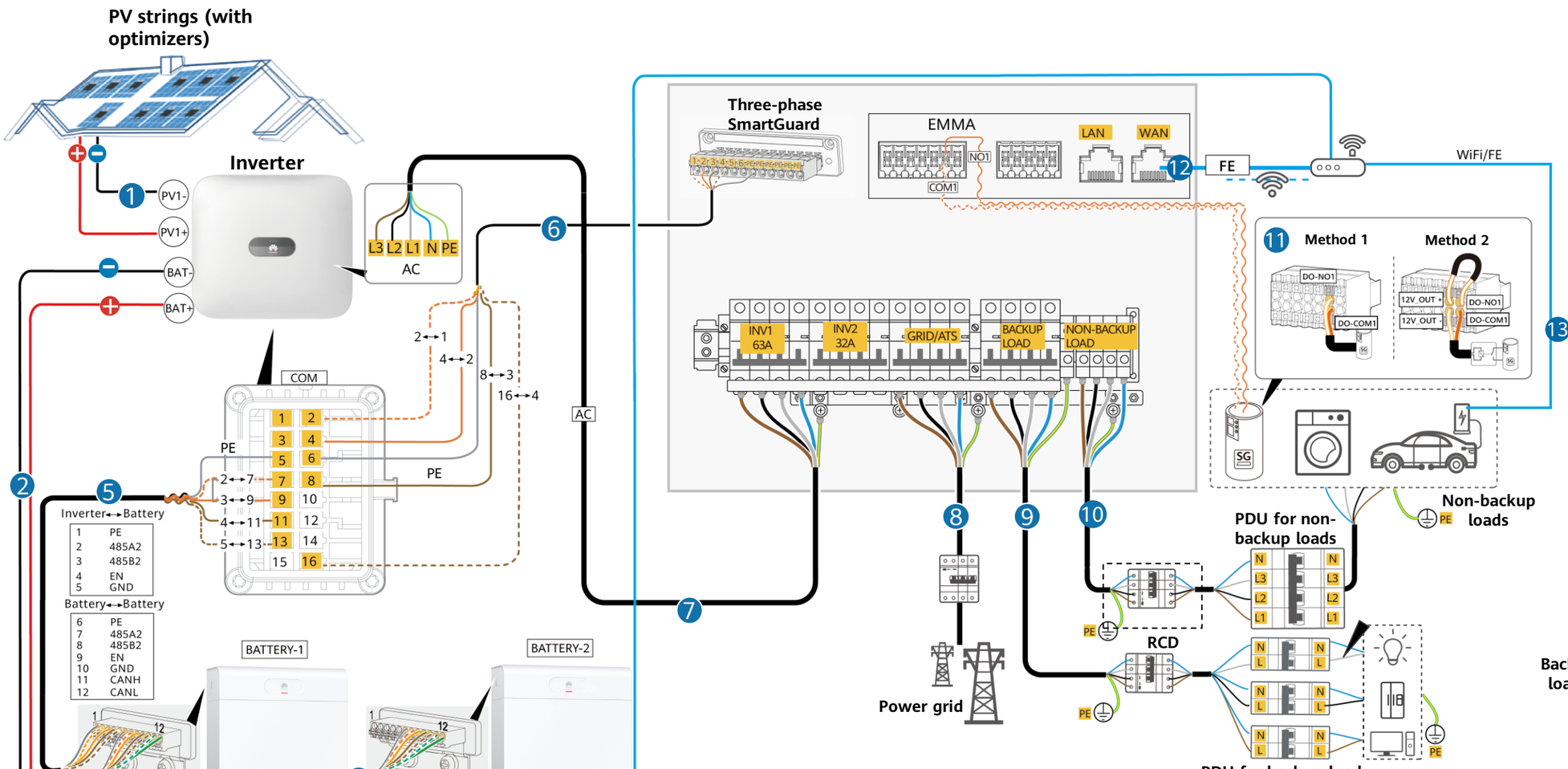
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

3 Cable Connections (Three-Phase Inverter M1/MB0 + ESS S1 + SmartGuard)



DANGER

- Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.
- An RCD must be installed before the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the load may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of M1 inverters x 100 mA or ≥ Number of MB0 inverters x 300 mA..

NOTICE

- Signal cables must be outdoor shielded twisted pair cables.
- Only one inverter can be connected to the SmartGuard.
- The PEN of the SmartGuard-63A-T0 backup power port must be connected, but the PEN of the SmartGuard-63A-AUT0 backup power port does not need to be connected.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	
AC power cable	1	Inverter	PV1+	Positive terminal	PV strings
			PV1-	Negative terminal	
	2	Inverter	BAT+	BAT+	ESS 1
			BAT-	BAT-	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT-	BAT-	

Cable Type	No.	One End		The Other End	
		Component	Port	Port	
Signal cable	4	ESS 1	COM-7	COM-7	ESS 2
			COM-8	COM-8	
			COM-9	COM-9	
			COM-10	COM-10	
			COM-11	COM-11	
			COM-12	COM-12	
	5	Inverter 1	COM-13	COM-5	ESS 1
			COM-11	COM-4	
			COM-7	COM-2	
			COM-9	COM-3	
			COM-5 (shield layer)	COM-1 (shield layer)	
	6	Inverter	COM-2	COM-1	SmartGuard
			COM-4	COM-2	
			COM-8	COM-3	
			COM-16	COM-4	

Cable Type	No.	One End		One End	
		Component	Port	Port	Component
AC power cable	7	Inverter	AC-L1	INV1-L1	SmartGuard
			AC-L2	INV1-L2	
			AC-L3	INV1-L3	
			AC-N	INV1-N	
			AC-PE	INV1-PE	
	8	Grid	L1	GRID/ATS-L1	SmartGuard
			L2	GRID/ATS-L2	
			L3	GRID/ATS-L3	
			N	GRID/ATS-N	
	9	PDU for backup loads	L1	BACKUP LOAD-L1	SmartGuard
			L2	BACKUP LOAD-L2	
			L3	BACKUP LOAD-L3	
			N	BACKUP LOAD-N	
	10	PDU for non-backup loads	L1	NON-BACKUP LOAD-L1	SmartGuard
			L2	NON-BACKUP LOAD-L2	
			L3	NON-BACKUP LOAD-L3	
			N	NON-BACKUP LOAD-N	

Cable Type	No.	Cable Connection Description
Signal cable	11	Method 1: Use DO dry contacts to directly drive the SG Ready heat pump. The max. capability of the DO dry contacts is 12 V DC@1 A. Method 2: Use a 12 V@30 mA power supply to drive the external relay. Choose the proper contact capability of the external relay according to the SG Ready heat pump port.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	12	EMMA	WAN	LAN	Router
	13	Charger	FE	LAN	Router

Residential Smart PV Solution Quick Guide
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

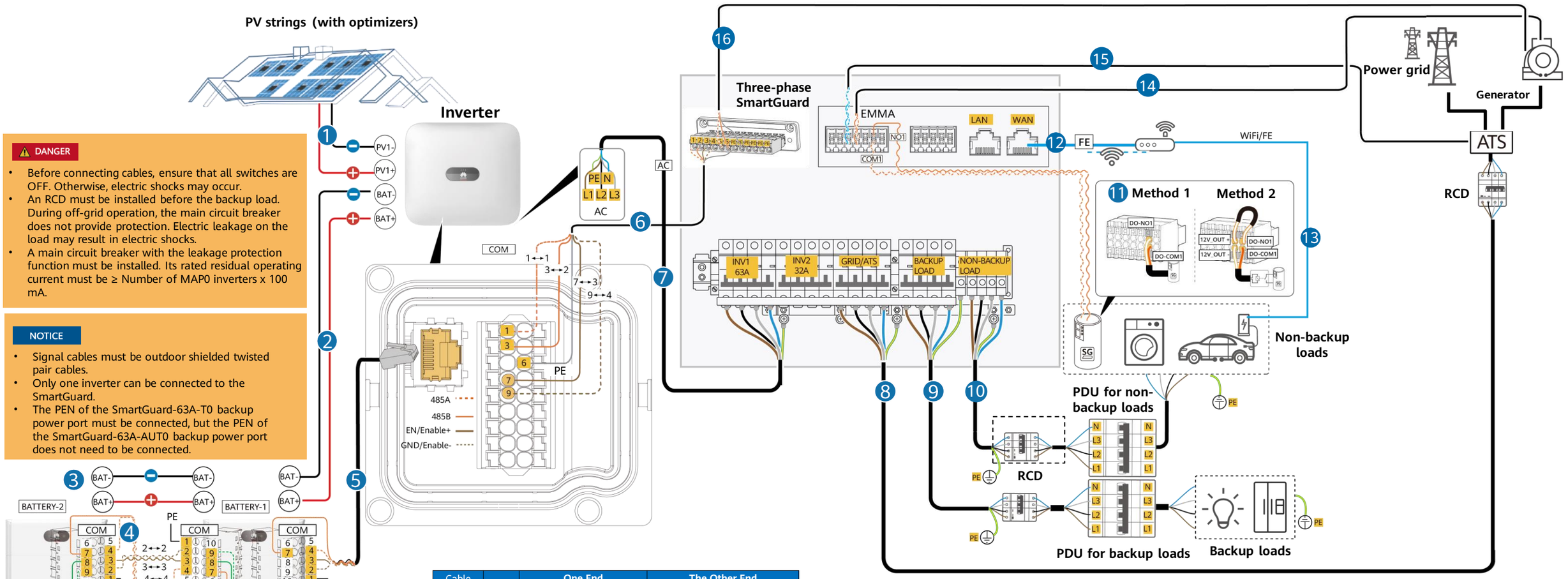
3 Cable Connections (Three-Phase Inverter MAP0 + ESS S0 + SmartGuard Connected to All Loads)

DANGER

- Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.
- An RCD must be installed before the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the load may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of MAP0 inverters x 100 mA.

NOTICE

- Signal cables must be outdoor shielded twisted pair cables.
- Only one inverter can be connected to the SmartGuard.
- The PEN of the SmartGuard-63A-T0 backup power port must be connected, but the PEN of the SmartGuard-63A-AUT0 backup power port does not need to be connected.



Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
DC power cable	1	Inverter	PV1+	Positive terminal	PV strings
			PV1-	Negative terminal	
	2	Inverter	BAT+	BAT+	ESS 1
			BAT-	BAT-	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT-	BAT-	
Signal cable	4	ESS 1	COM-2 (left)	COM-2 (right)	ESS 2
			COM-3 (left)	COM-3 (right)	
			COM-4 (left)	COM-4 (right)	
			COM-7 (left)	COM-7 (right)	
			COM-8 (left)	COM-8 (right)	
			COM-9 (left)	COM-9 (right)	
	5	Inverter	COM: RJ45 network port	COM-7 (right)	ESS 1
				COM-4 (right)	
				COM-2 (right)	
				COM-3 (right)	
	6	Inverter	COM-1	COM-1	SmartGuard
			COM-3	COM-2	
			COM-7	COM-3	
			COM-9	COM-4	
	16	SmartGuard	COM-5	Generator control signal port	Generator
			COM-6		

Cable Type	No.	One End		One End	
		Component	Port	Port	Component
AC power cable	7	Inverter	AC-L1	INV1-L1	SmartGuard
			AC-L2	INV1-L2	
			AC-L3	INV1-L3	
			AC-N	INV1-N	
			AC-PE	INV1-PE	
	8	Grid	L1	GRID/ATS-L1	SmartGuard
			L2	GRID/ATS-L2	
			L3	GRID/ATS-L3	
			N	GRID/ATS-N	
	9	PDU for backup loads	L1	BACKUP LOAD-L1	SmartGuard
			L2	BACKUP LOAD-L2	
			L3	BACKUP LOAD-L3	
			N	BACKUP LOAD-N	
	10	PDU for non-backup loads	L1	NON-BACKUP LOAD-L1	SmartGuard
			L2	NON-BACKUP LOAD-L2	
			L3	NON-BACKUP LOAD-L3	
			N	NON-BACKUP LOAD-N	

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	14	SmartGuard	DI2+	Generator alarm signal port	Generator
			DI2-		
	15	SmartGuard	DI1+	Position feedback signal upon grid connection	ATS
			DI1-		

Cable Type	No.	Cable Connection Description
Signal cable	11	Method 1: Use DO dry contacts to directly drive the SG Ready heat pump. The max. capability of the DO dry contacts is 12 V DC@1 A. Method 2: Use a 12 V@30 mA power supply to drive the external relay. Choose the proper contact capability of the external relay according to the SG Ready heat pump port.

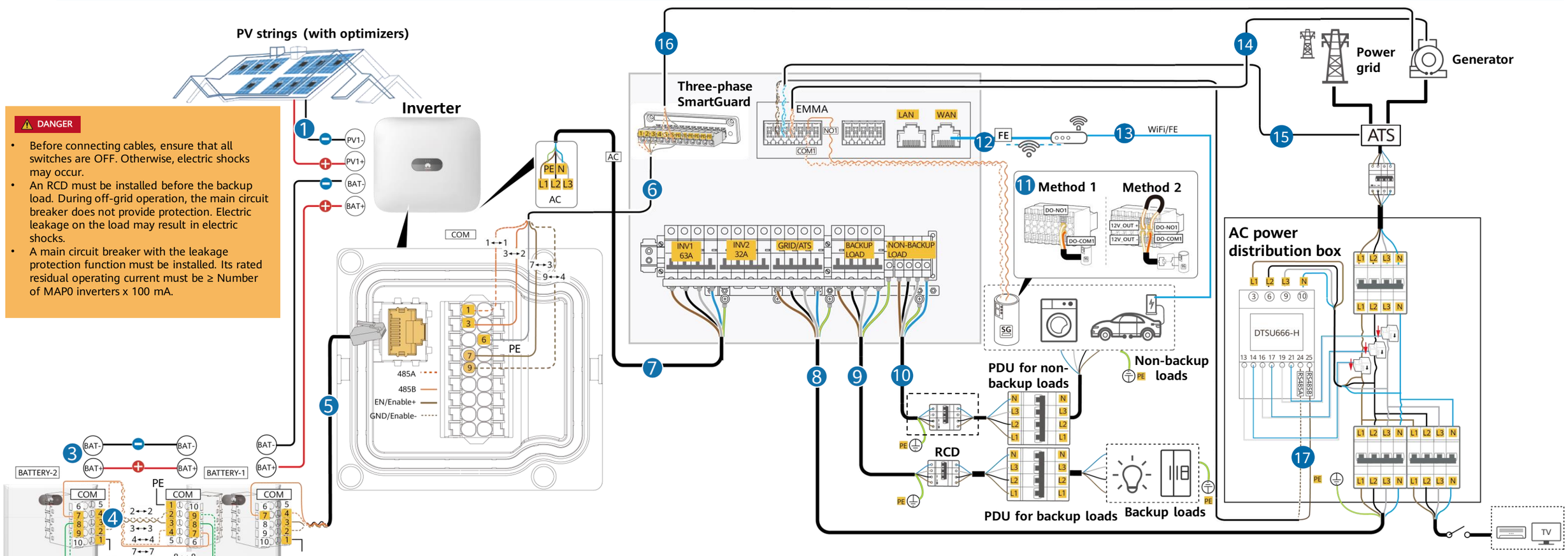
Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	12	EMMA	WAN	LAN	Router
	13	Charger	FE	LAN	Router

Residential Smart PV Solution Quick Guide
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

3 Cable Connections (Three-Phase Inverter MAP0 + ESS S0 + SmartGuard Connected to Some of Loads)

DANGER

- Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.
- An RCD must be installed before the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the load may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of MAP0 inverters x 100 mA.



NOTICE

- Signal cables must be outdoor shielded twisted pair cables.
- Only one inverter can be connected to the SmartGuard.
- The PEN of the SmartGuard-63A-T0 backup power port must be connected, but the PEN of the SmartGuard-63A-AUT0 backup power port does not need to be connected.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
DC power Cable	1	Inverter	PV1+	Positive terminal	PV strings
			PV1-	Negative terminal	
	2	Inverter	BAT+	BAT+	ESS 1
			BAT-	BAT-	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT-	BAT-	
Signal Cable	4	ESS 1	COM-2 (left)	COM-2 (right)	ESS 2
			COM-3 (left)	COM-3 (right)	
			COM-4 (left)	COM-4 (right)	
			COM-7 (left)	COM-7 (right)	
			COM-8 (left)	COM-8 (right)	
			COM-9 (left)	COM-9 (right)	
	5	Inverter	COM: RJ45 network port	COM-7 (right)	ESS 1
				COM-4 (right)	
				COM-2 (right)	
				COM-3 (right)	
	6	Inverter	COM-1	COM-1	SmartGuard
			COM-3	COM-2	
			COM-7	COM-3	
			COM-9	COM-4	
	16	SmartGuard	COM-5	Generator control signal port	Generator
			COM-6		

Cable Type	No.	One End		One End	
		Component	Port	Port	Component
AC power cable	7	Inverter	AC-L1	INV1-L1	SmartGuard
			AC-L2	INV1-L2	
			AC-L3	INV1-L3	
			AC-N	INV1-N	
			AC-PE	INV1-PE	
	8	Grid	L1	GRID/ATS-L1	SmartGuard
			L2	GRID/ATS-L2	
			L3	GRID/ATS-L3	
			N	GRID/ATS-N	
	9	PDU for backup loads	L1	BACKUP LOAD-L1	SmartGuard
			L2	BACKUP LOAD-L2	
			L3	BACKUP LOAD-L3	
			N	BACKUP LOAD-N	
	10	PDU for non-backup loads	L1	NON-BACKUP LOAD-L1	SmartGuard
			L2	NON-BACKUP LOAD-L2	
			L3	NON-BACKUP LOAD-L3	
			N	NON-BACKUP LOAD-N	

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	14	SmartGuard	DI2+	Generator alarm signal port	Generator
			DI2-		
	15	SmartGuard	DI1+	Position feedback signal upon grid connection	ATS
			DI1-		
	17	SmartGuard	485A2	24	DTSU666-H
			485B2	25	

Cable Type	No.	Cable Connection Description
Signal cable	11	Method 1: Use DO dry contacts to directly drive the SG Ready heat pump. The max. capability of the DO dry contacts is 12 V DC@1 A. Method 2: Use a 12 V@30 mA power supply to drive the external relay. Choose the proper contact capability of the external relay according to the SG Ready heat pump port.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	12	EMMA	WAN	LAN	Router
	13	Charger	FE	LAN	Router

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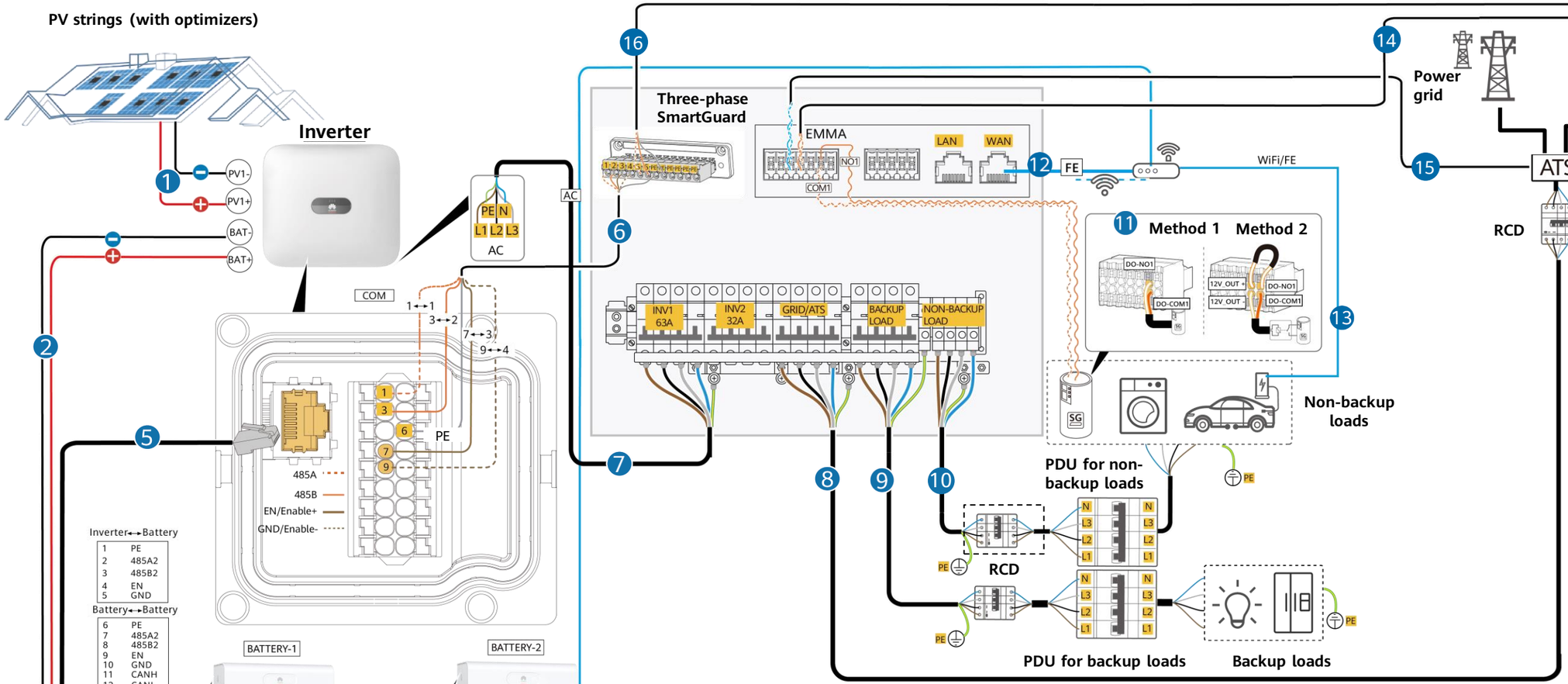
3 Cable Connections (Three-Phase Inverter MAP0 + ESS S1 + SmartGuard Connected to All Loads)



DANGER

- Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.
- An RCD must be installed before the backup load. During off-grid operation, the main circuit breaker does not provide protection. Electric leakage on the load may result in electric shocks.
- A main circuit breaker with the leakage protection function must be installed. Its rated residual operating current must be ≥ Number of MAP0 inverters x 100 mA.

NOTICE

- Signal cables must be outdoor shielded twisted pair cables.
- Only one inverter can be connected to the SmartGuard.
- The PEN of the SmartGuard-63A-T0 backup power port must be connected, but the PEN of the SmartGuard-63A-AUT0 backup power port does not need to be connected.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
DC power cable	1	Inverter	PV1+	Positive terminal	PV strings
			PV1-	Negative terminal	
	2	Inverter	BAT+	BAT+	ESS 1
			BAT-	BAT-	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT-	BAT-	
Signal cable	4	ESS 1	COM-7	COM-7	ESS 2
			COM-8	COM-8	
			COM-9	COM-9	
			COM-10	COM-10	
			COM-11	COM-11	
			COM-12	COM-12	
	5	Inverter	COM: RJ45 network port	COM-3	ESS 1
				COM-2	
				COM-5	
				COM-4	
	6	Inverter	COM-1	COM-1	SmartGuard
			COM-3	COM-2	
			COM-7	COM-3	
			COM-9	COM-4	
	16	SmartGuard	COM-5	Generator control signal port	Generator
			COM-6		

Cable Type	No.	One End		One End	
		Component	Port	Port	Component
AC power cable	7	Inverter	AC-L1	INV1-L1	SmartGuard
			AC-L2	INV1-L2	
			AC-L3	INV1-L3	
			AC-N	INV1-N	
			AC-PE	INV1-PE	
	8	Grid	L1	GRID/ATS-L1	SmartGuard
			L2	GRID/ATS-L2	
			L3	GRID/ATS-L3	
			N	GRID/ATS-N	
	9	PDU for backup loads	L1	BACKUP LOAD-L1	SmartGuard
			L2	BACKUP LOAD-L2	
			L3	BACKUP LOAD-L3	
			N	BACKUP LOAD-N	
	10	PDU for non-backup loads	L1	NON-BACKUP LOAD-L1	SmartGuard
			L2	NON-BACKUP LOAD-L2	
			L3	NON-BACKUP LOAD-L3	
			N	NON-BACKUP LOAD-N	

Cable Type	No.	Cable Connection Description
Signal cable	11	Method 1: Use DO dry contacts to directly drive the SG Ready heat pump. The max. capability of the DO dry contacts is 12 V DC@1 A. Method 2: Use a 12 V@30 mA power supply to drive the external relay. Choose the proper contact capability of the external relay according to the SG Ready heat pump port.

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
Signal cable	12	EMMA	WAN	LAN	Router
	13	Charger	FE	LAN	Router
	14	SmartGuard	DI2+	Generator alarm signal port	Generator
			DI2-		
	15	SmartGuard	DI1+	Position feedback signal upon grid connection	ATS
			DI1-		

Residential Smart PV Solution Quick Guide
(Three-Phase PV+ESS Scenario + SmartGuard Networking)

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4 System Commissioning

App-based Deployment Procedure

Download and install the FusionSolar app

↓

Sign up as an installer (optional, required for initial registration)

↓

Enter the setup wizard

↓

Check the device status

Downloading and Installing the FusionSolar App

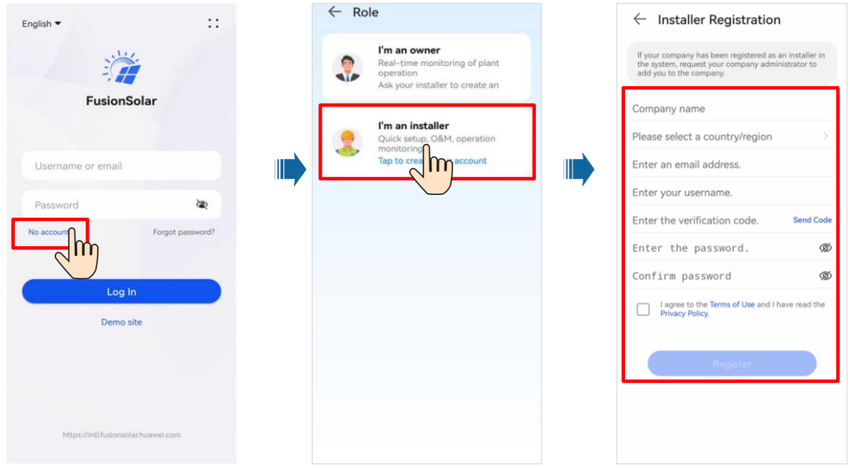
- Search for FusionSolar in the app store to download the app.
- Scan the QR code below to download the app.

Huawei FusionSolar

Installer Registration

Initial registration

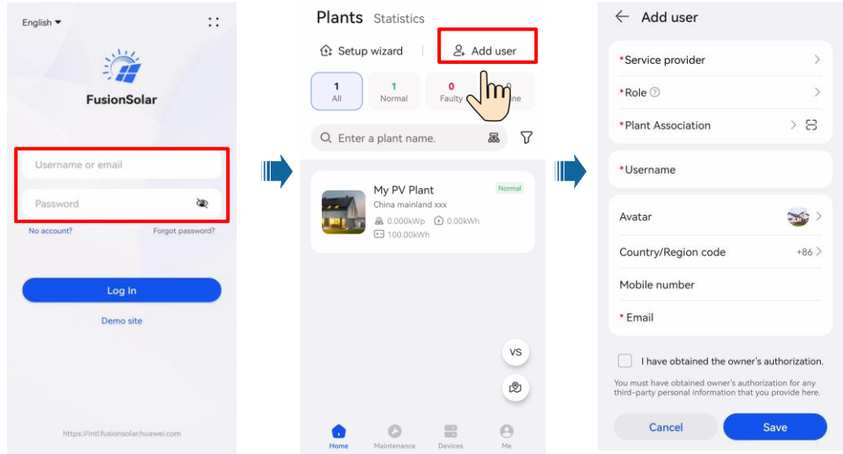
Create the first installer account, and generate a domain named after the company.



or

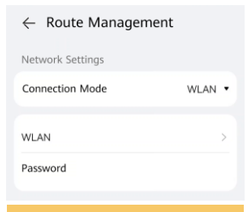
Non-initial registration

To create multiple installer accounts for a company, log in to the FusionSolar app and tap **Invite user** to create another installer account.

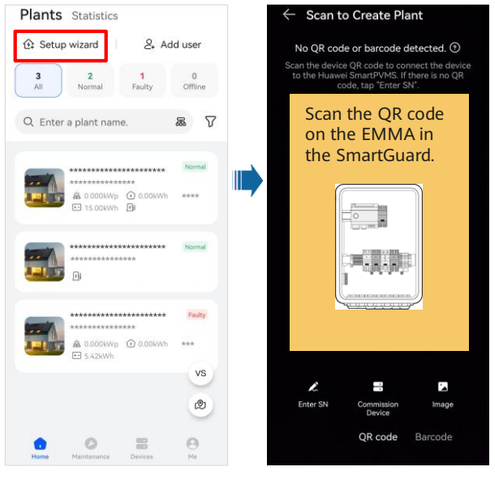


Setup Wizard (Connecting to the EMMA WLAN for Commissioning)

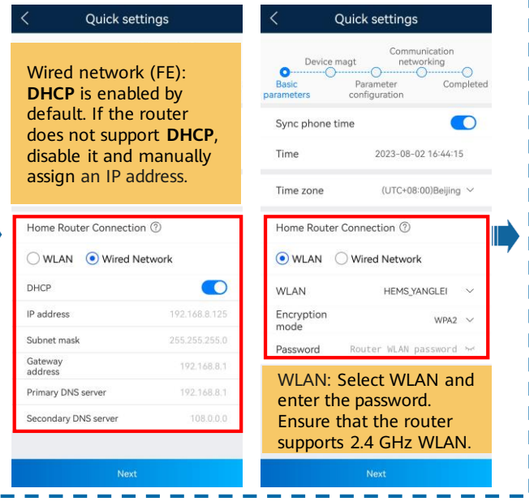
Set the WLAN information of the charger.



If the charger connects to the router through WLAN, you need to log in to the charger to set the WLAN information before deploying the EMMA.



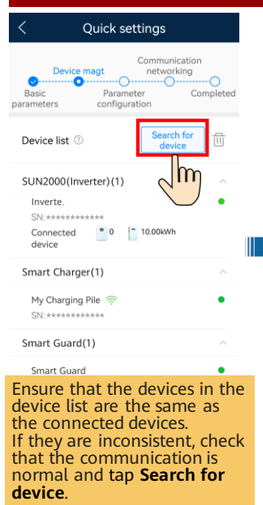
Set the router parameters.



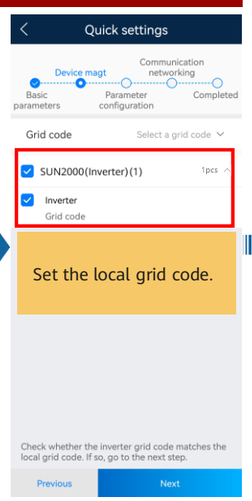
Residential Smart PV Solution Quick Guide

(Single-Phase PV+ESS Scenario + SmartGuard Networking)

Device management

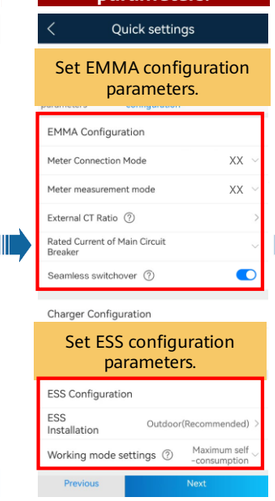


Ensure that the devices in the device list are the same as the connected devices.
If they are inconsistent, check that the communication is normal and tap **Search for device**.



Set the local grid code.

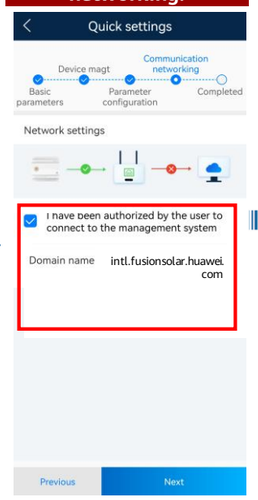
Set the key parameters.



Set EMMA configuration parameters.

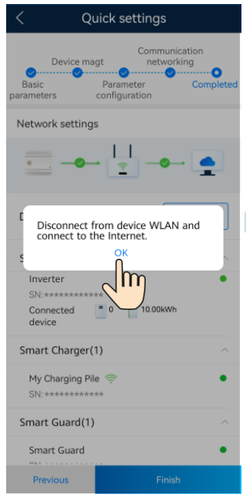
Set ESS configuration parameters.

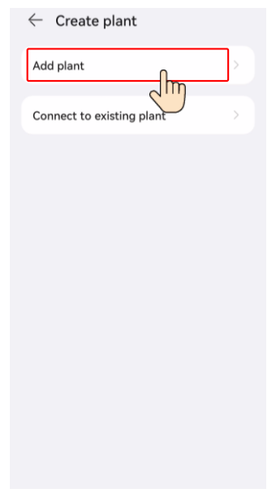
Set the communication networking.



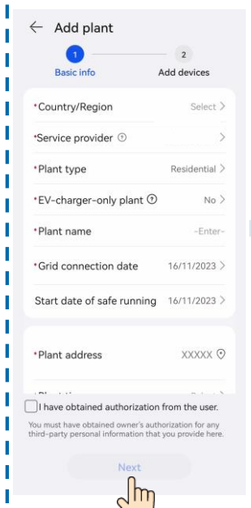
Connection test

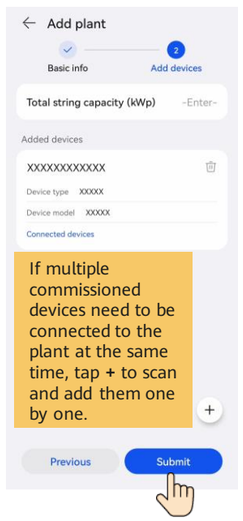
Create a plant.





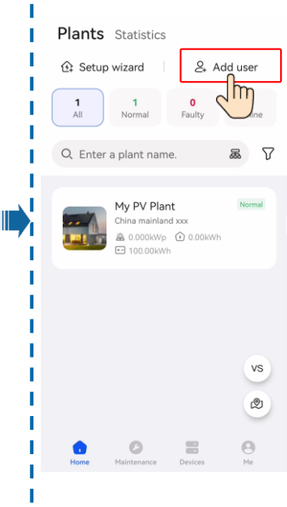
Add a plant.

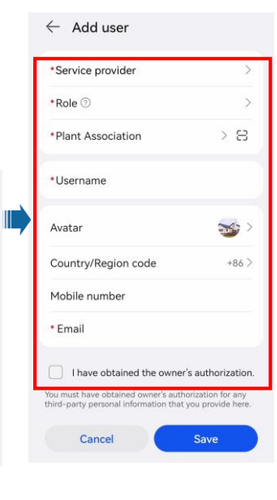




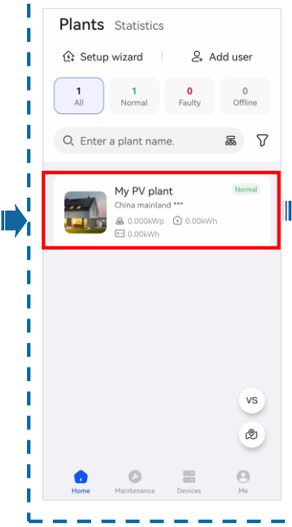
If multiple commissioned devices need to be connected to the plant at the same time, tap + to scan and add them one by one.

Create an owner account.





Viewing the Plant Status



Residential Smart PV Solution Quick Guide
(Single-Phase PV+ESS Scenario + SmartGuard Networking)

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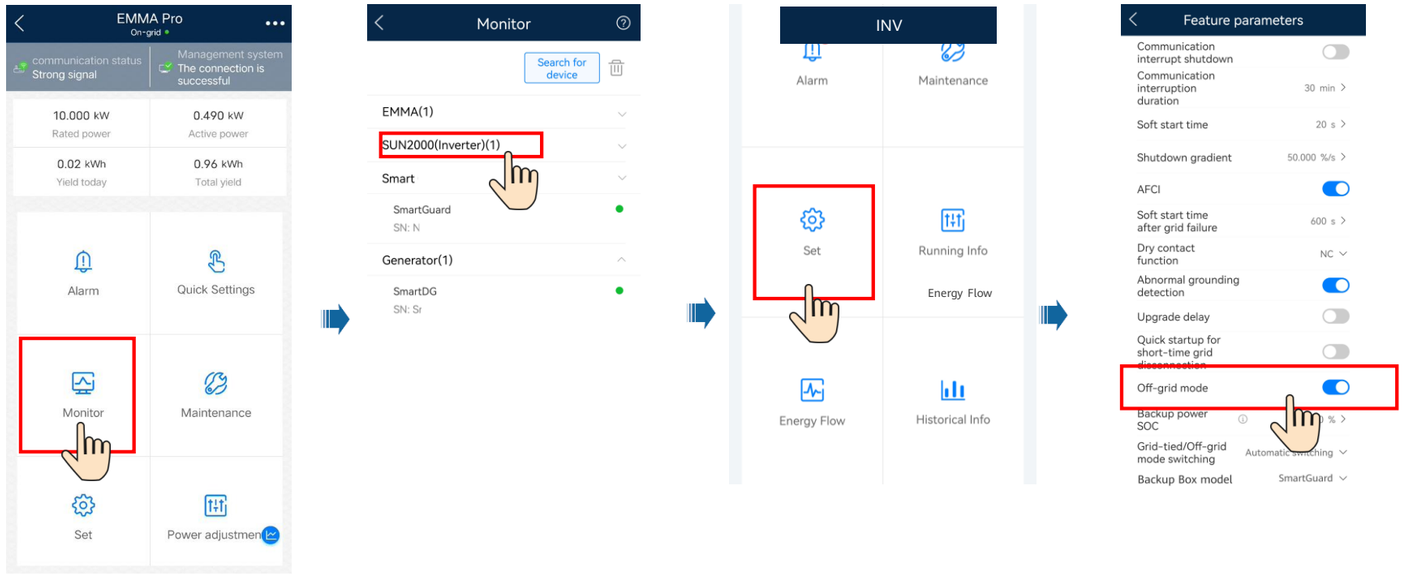
5 On/Off-Grid Control Parameters

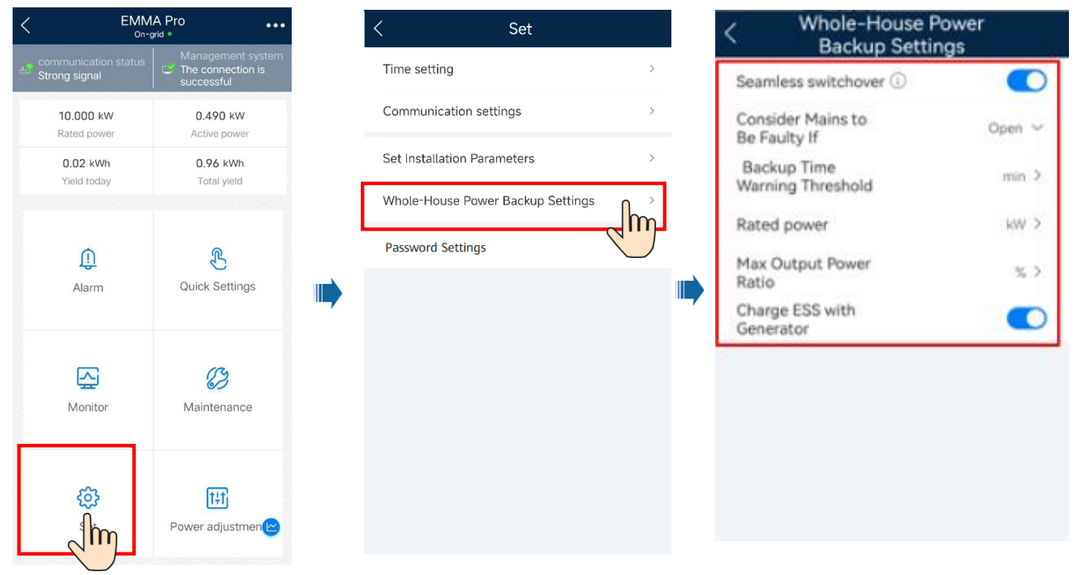
Enabling Off-Grid Mode

Monitor
↓
Inverter
↓
Set
↓
Off-grid mode; Backup power SOC; Grid-tied/Off-grid mode switching



Setting Seamless Switchover

Set
↓
Whole-House Power Backup Settings
↓
Seamless switchover



Residential Smart PV Solution Quick Guide
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6 Grid-tied Point Parameters

Setting Grid-tied Point Control

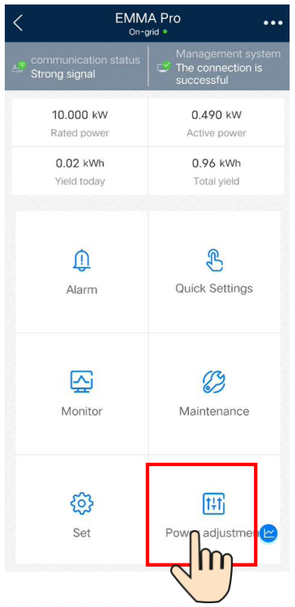
Power adjustment

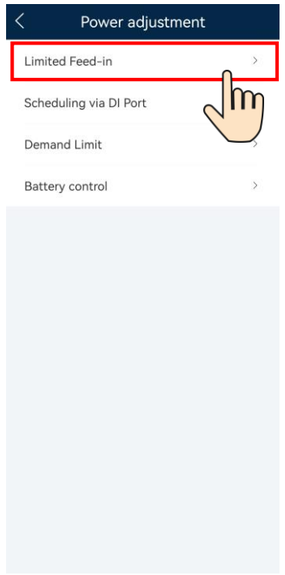
↓

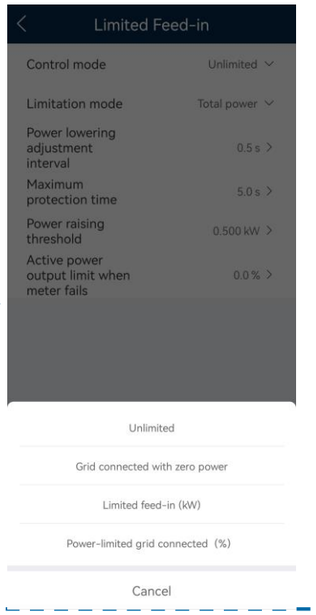
Limited Feed-in

↓

Control mode
- **Unlimited**
- **Grid connected with zero power**
- **Limited feed-in (kW)**
- **Power-limited grid connected (%)**







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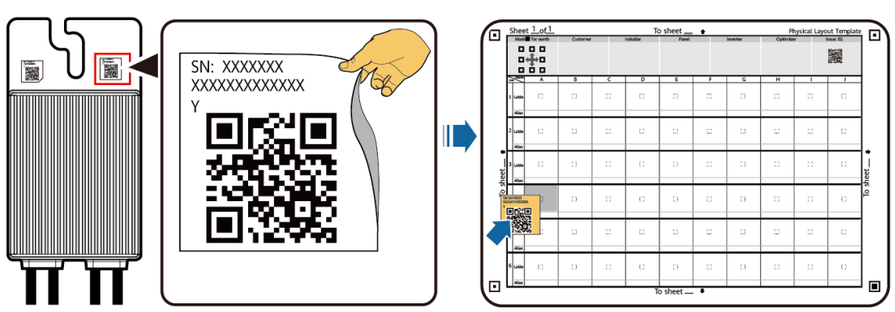
7 Physical Layout of Smart PV Optimizers

Attaching SN Labels

Remove the SN labels from optimizers and attach them to the physical layout template based on the actual positions of the optimizers in the plant.

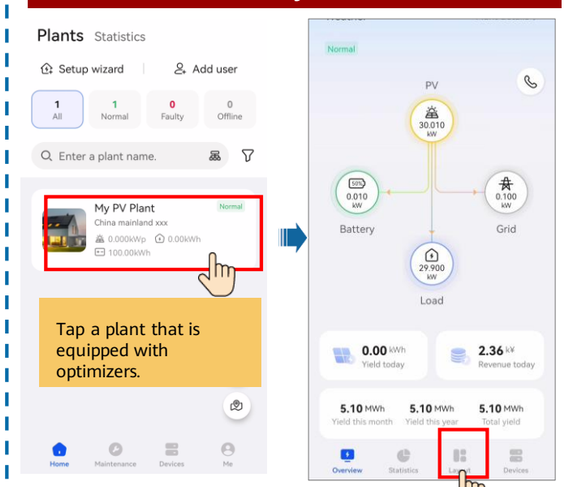


Taking a Photo of the Physical Layout Template

Ensure that the four positioning points on the template are within the frame.

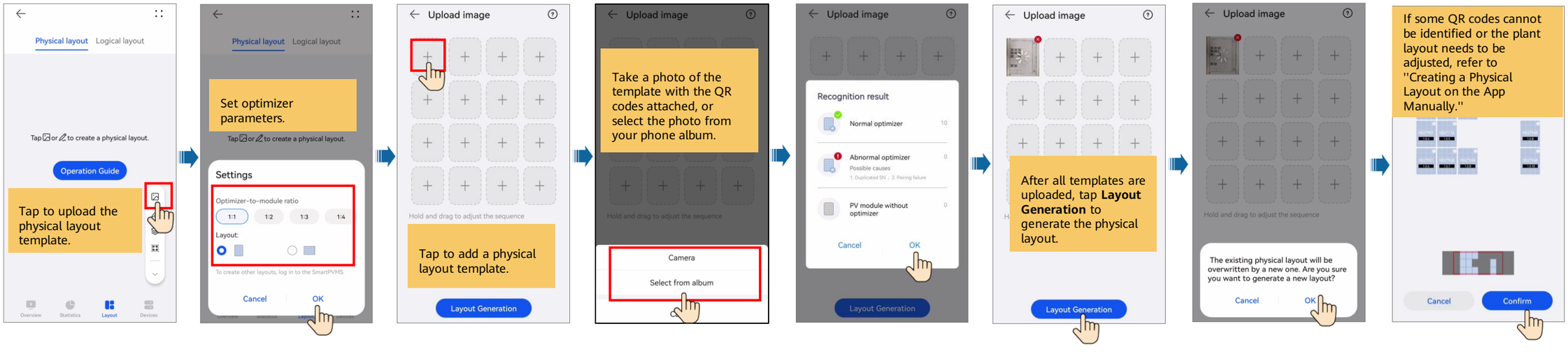
Generating a Physical Layout on the App

Enter the Layout screen.



Generating a Physical Layout on the App Automatically

Upload the template and generate a layout.



Residential Smart PV Solution Quick Guide
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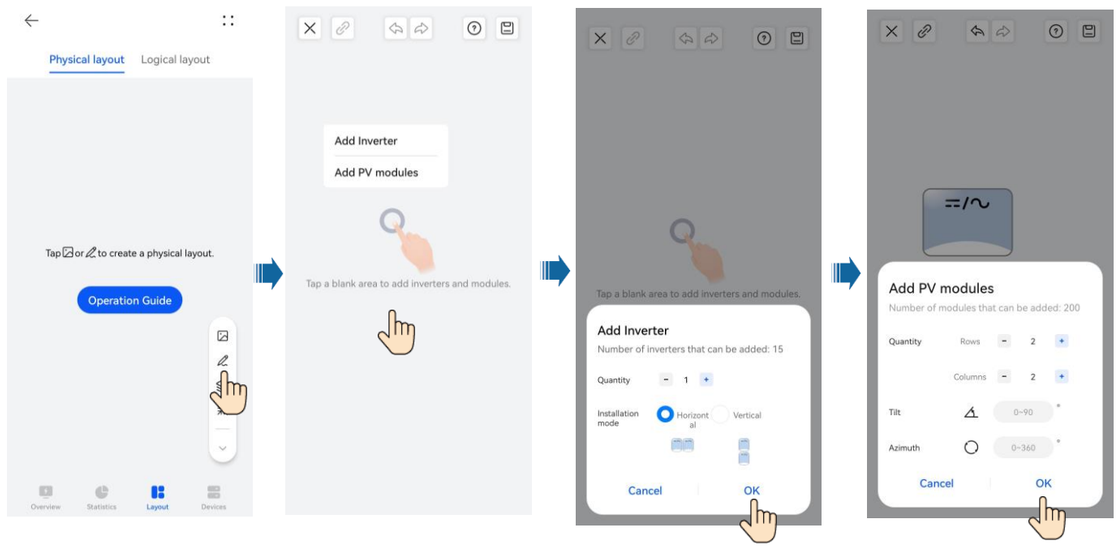
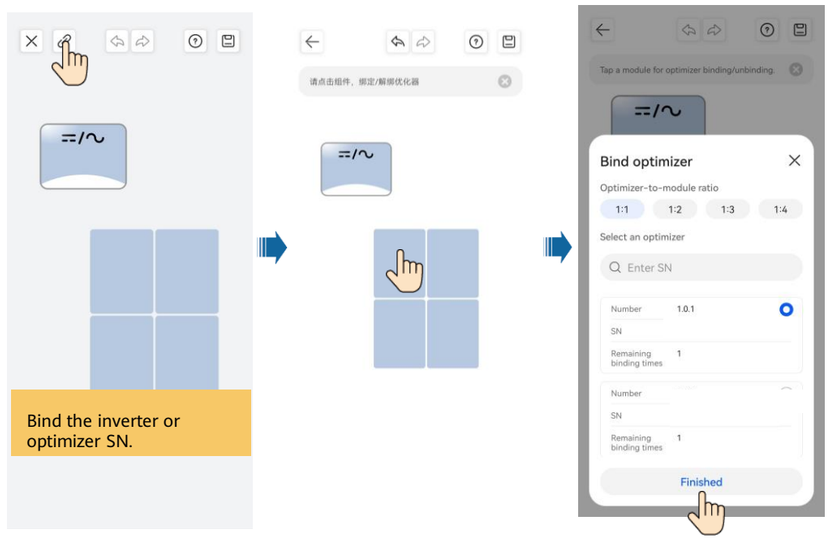
Creating a Physical Layout on the App Manually

Edit the physical layout and specify the quantity of inverters and PV modules as required.



Bind the inverter or optimizer SN.



Adjust the physical layout.